بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

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في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائـــــق الاصليـــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

COMPARATIVE ACCURACY OF HIGH-RESOLUTION COMPUTED TOMOGRAPHY (HRCT) AND CHEST RADIOGRAPHY IN THE DIAGNOSIS OF CHRONIC INFILTRATIVE LUNG DISEASE

Thesis

Submitted For Partial Fulfillment of The

Master Degree in Radiodiagnosis

By

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1999

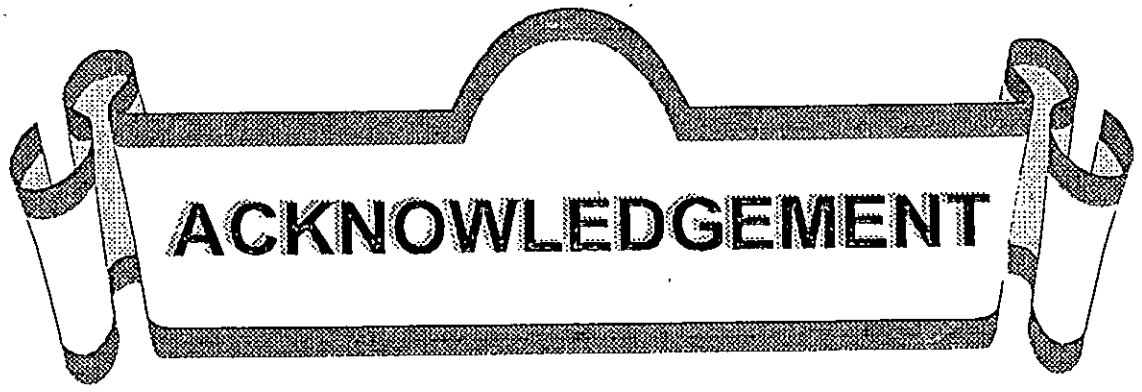
بسم الله الرحمن الرحيم

وأنزل الله عليك الكتاب والحكمة وعلمك ما لم تكن تعلم وكان فضل الله عليك عظيما

" صدق الله العظيم "

((سورة النساء .. آية ١١٣))

To The Memory Of
My Father
To My Dear Mother
And
To My Brothers and
Sisters


ACKNOWLEDGEMENT

ACKNOWLEDGMENT

Thanks to our merciful **GOD** for the plentiful blessings and thanks to **GOD** once more for enabling me to prepare this thesis.

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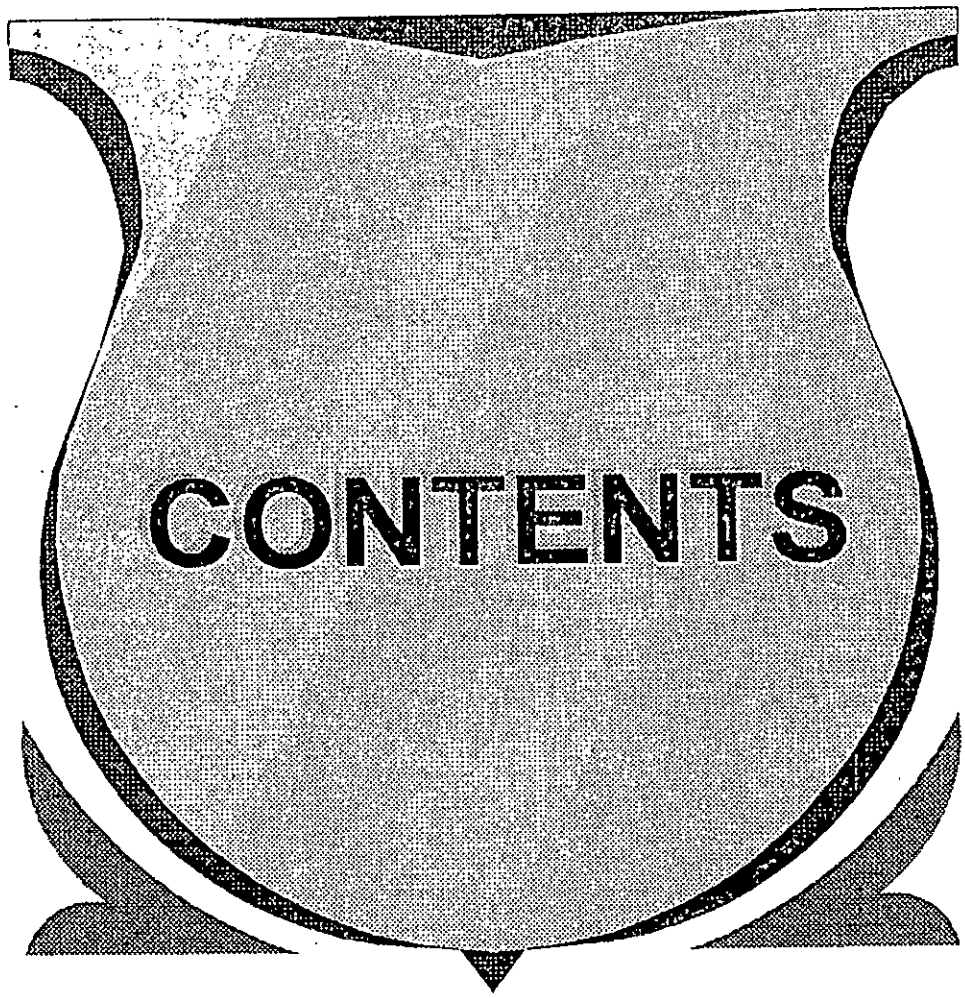
Hazem Abu Zeid Yousef

1999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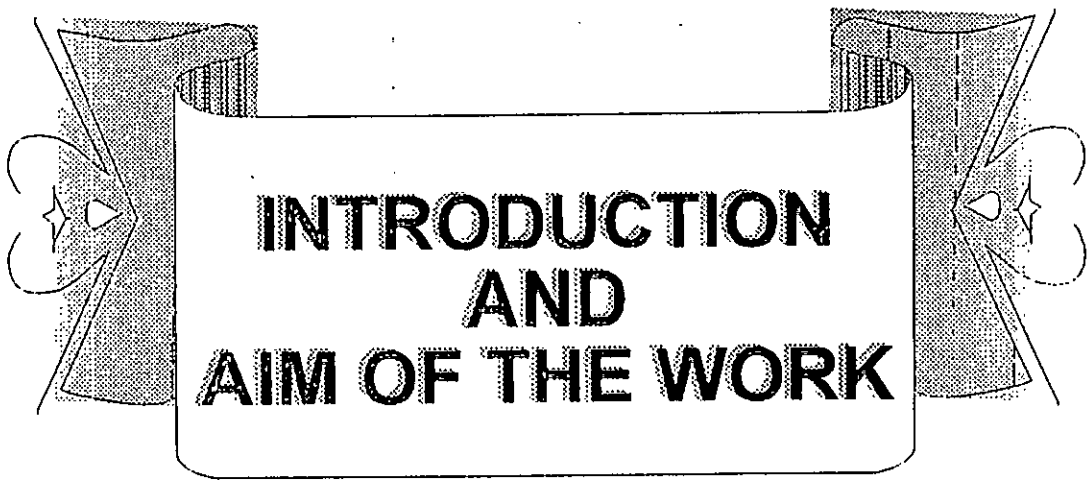
INTRODUCTION
AND
AIM OF THE WORK

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The radiological contribution to the diagnosis of patients with chronic infiltrative lung disease (CILD) remains a considerable challenge. The efficacy of chest radiography as the prime means of radiological investigation of diffuse infiltrative lung disease DILD has been adressed by a number of investigators who have described various methods for the systematic and objective analysis of chest radiographs in an attempt to improve diagnostic accuracy (Felson, 1979; International Labour Office, 1980 and McLoud et al., 1983).

Even in the most experienced hands it is generally accepted that chest radiography is relatively non-specific and insensitive in the diagnosis and detection of DILD (Padley et al.; 1991).

Chest radiographs lack specificity. Epler et al., in examining 458 patients with histologically confirmed infiltrative lung disease, showed that 44, or nearly 10% had normal prebiopsy radiographs (Epler et al., 1978).

Over the past several years, considerable effort has been directed toward evaluating the potential of CT in the diagnosis of infiltrative lung diseases. This interest, in part, is a reflection of the well established limitations of routine chest radiography (Naidich, 1989).

By eliminating super imposition of structures and enhancing attenuation discremination, CT provides a direct visual window into the lungs. While these advantages were appreciated early after the development of CT in the diagnosis of both focal and diffuse lung disease, technical limitations, including routine lack of access, and 18 second scan times precluded wide

spread utilization (Solomon et al., 1979; Robinson et al., 1979 and Kreel, 1982).

Over the past several years, with the development of rapid scan times (on the order of 1-2 seconds) and improved reconstruction algorithms, the role of CT has progressively changed. As originally shown by Zerhouni et al. (Zerhouni et al., 1985) and elaborated on by Mayo et al. (Mayo et al., 1987), thin collimation (1.5 mm. thick sections) and targeted reconstruction with a high spatial frequency (bone) algorithm (in other wards high resolution CT [HRCT]) can routinely provide remarkably detailed images of the pulmonary architecture (David et al., 1989).

The HRCT appearences of many chronic diffuse lung conditions have now been fully described, and a number of these diseases have sufficiently characterestic HRCT appearences to allow a confident diagnosis to be made. These include fibrosing alveolitis, lymphangitis carcinomatosa, sarcoidosis, silicosis, histiocytosis-X and lymphangioleiomyomatosis (Bergin et al., 1989).

Heitzman et al (Heitzman et al., 1969) divided the pulmonary lobule into "core structures" and "septal structures" and demonstrated pathologic processes that may involve various elements within the labules. Itoh et al. (Itoh et al., 1978) reported that certain disease processes, such as bronchopneumonia, acinonodose tuberculosis, chronic bronchiolitis, and simple pneumoconiosis, may be manifested as small intralobular nodules around the terminal or respiratory bronchioles. Accurate localization of pathologic changes within the lobule therefore could be helpful in the differential diagnosis of certain pulmonary parenchymal diseases while conventional chest radiography and standard computed tomography (CT) provide little of such information, high resolution CT (HRCT) may permit localization of disease processes within the lobule (Murata et al., 1989).